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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,923	02/28/2002	Horst Biesenecker	GR 99 P 3592	1159

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EXAMINER  
DOUGHERTY, THOMAS M

ART UNIT PAPER NUMBER  
2834

DATE MAILED: 07/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/085,923

Applicant(s)

BIESENECKER ET AL.

Examiner

Thomas M. Dougherty

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 112***

Claims 2-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 notes that "said adaptation layer is applied to one of said sides of said adaptation layer" which makes no sense. It is suspected that the Applicants meant that the adaptation layer is applied to one of the sides of one of the piezoelectric layers, which is how the claim has been considered below. Claims 3-5 depend on claim 2.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumura (JP 3-64081) in view of Nishigaki et al. (US 4,363,993). Matsumura shows (e.g. fig. 2) a piezoelectric transducer, comprising: a supporting element (2) having opposite sides; a piezoelectrically active layer (1A, 1B) applied to at least one of said sides of said supporting element (2); and an adaptation layer (4) for reducing inherent thermal distortion (see CONSTITUTION), said adaptation layer having a predefined volume (note in each figure that it is the same size), said adaptation layer being applied

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to said piezoelectrically active layer (1A). Said piezoelectrically active layer (1A, 1B) is applied to both of said sides of said supporting element (2), and said adaptation layer is applied to one of said sides of said [piezoelectrically active] layer[s]. His piezoelectrically active layer (1A, 1B) is a piezoceramic. There is an electrode ((3) interposed between said adaptation layer (4) and said piezoelectrically active layer.

Matsumura doesn't explicitly state that his device is a bender. He doesn't note use of screen-printing. He doesn't note that his adaptation layer is a plastic or that it is epoxy resin.

Nishigaki shows (fig. 4) a piezoelectric bender (see displacements in fig. 6) transducer, comprising: a supporting element (13) having opposite sides; a piezoelectrically active layer (12) applied to at least one of said sides of said supporting element (13). Said piezoelectrically active layer (12) is applied to both of said sides of said supporting element (13). His piezoelectrically active layer (12) is a piezoceramic (col. 4, ll. 26-28).

He does not show an adaptation layer (4) for reducing inherent thermal distortion (see CONSTITUTION), said adaptation layer having a predefined volume (note in each figure that it is the same size), said adaptation layer being applied to said piezoelectrically active layer (1A).

It would have been obvious to one having ordinary skill in the art to use the piezoelectric device of Matsumura as a bender such as is taught by Nishigaki at the time the Matsumura invention was made since this is a typical use of such structures for the purpose of establishing electrical contact, valve opening/closing, resonating

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purposes, etc. as noted by Nishigaki in his BACKGROUND OF THE INVENTION.

Regarding how the adaptation layer is applied, e.g. silk-screening, is a method of forming the device and this is not germane to the issue of patentability of the device itself. *In re Brown* 173 USPQ 685, *In re Fessman* 180 USPQ 324. In regards to the materials for the adaptation layer, it would have been obvious to one having ordinary skill in the art to employ epoxy resin or other plastic since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

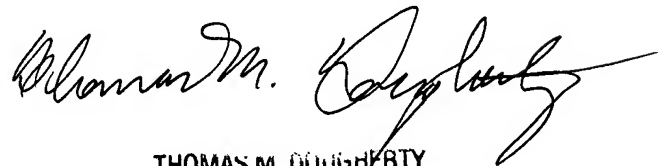
### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining prior art cited reads on at least some aspect of the claimed invention.

Direct inquiry concerning this action to Examiner Dougherty at (703) 308-1628.

  
tmd

June 27, 2002

  
THOMAS M. DOUGHERTY  
PRIMARY EXAMINER  
GROUP 2100 